

REMARKS

The office action of July 28, 2010, has been carefully considered.

It is noted that claims 1-5 are rejected under 35 U.S.C. 112, first paragraph.

Claims 1 and 4-5 are rejected under 35 U.S.C. 102(b) over the patent to Robotham.

Claim 2 is rejected under 35 U.S.C. 103(a) over Robotham in view of the patent to Draskovitch et al.

Claims 1 and 3-5 are rejected under 35 U.S.C. 103(a) over Robotham in view of the patent to Yoshida.

Claim 2 is rejected under 35 U.S.C. 103(a) over Robotham and Yoshida in view of Draskovitch et al.

Applicant submits that the subject matter contained in the claims is described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the

inventors, at the time the application was filed, had possession of the claimed invention.

As has been previously argued, the term "roller-burnished" is known in the art and implies a specific structural characteristic of the sealing surface. "Roller-burnished" is used to describe a structural feature of the sealing surface of the sealing ring, just as, for example, a material can be defined to have a "textured", "embossed" "knurled" or "coated" surface.

The roller-burnishing of the cylindrical component describes an entirely unique method for the smoothing and hardening of surface materials. Additionally, special tools are required, which for example have a roughened work surface, as well as a smooth surface, and with an appropriate pressure device that is pressed against the work piece. When pressure is exerted, the pressure device exerts a pressure force in the area of the contact surface between the pressure tool and the work pieces being worked on, which leads to a deformation and simultaneous hardening of the outer surface of the work piece. Depending on the profiling of the pressure tools, for example: smooth or profiled, a specific surface structure is simultaneously pressed in. These processes are applied usually for the production of

for example: knurled screws, to provide the knurling on the screws.

The roller-burnishing describes essentially a process for the production of a particular surface structure, indeed the component and the surface of the component, respectively, produced using said process have an entirely unique surface structure. Hence, Claim 1 device recites that the sealing surface of the sealing ring for roller bearings is roller-burnished, i.e. the sealing ring has a roller-burnished surface. This attribute is thus a structural feature, not simply a process limitation. Although the references teach a hard sealing surface, they do not teach a roller-burnished surface and the structure associated therewith.

In view of these considerations it is respectfully submitted that the rejection of claims 1-5 under 35 U.S.C. 112, first paragraph is overcome and should be withdrawn.

It is respectfully submitted that the claims presently on file differ essentially and in an unobvious, highly advantageous manner from the constructions disclosed in the references. The roller-burnished sealing surface is a structural feature of the

sealing ring.

The references do not teach a sealing ring having a cylindrical, roller-burnished sealing surface, as in the present invention.

Turning now to the references and particularly to the patent to Robotham, it can be seen that this patent discloses a sealing assembly in which the carrier ring 6 is coated with a metal coating (see column 2, line 60 to column 3, line 6). The reference does not disclose a roller-burnished sealing surface, as in the presently claimed invention. The roller-burnished sealing surface provides a surface that is work-hardened while its roughness is minimized. Also, elevations in the micrometer range which are present are made smaller and harder, and thereby increase the life of the elastic sealing element and reduce friction. The prior art coatings change the tolerances and do not at the same time provide the surface with a roughness that is minimized.

In view of these considerations it is respectfully submitted that the rejection of claims 1 and 4-5 under 35 U.S.C. 102(b) over the above-discussed reference is overcome and should be withdrawn.

The patent to Draskovich et al. discloses a composite face seal in which the flat surface of the rotor is coated with a hard material to minimize wear (see column 1, lines 65-67).

The Examiner combined Robotham with Draskovich et al. in determining that claim 2 would be unpatentable over such a combination. Neither Robotham nor Draskovich et al. teach a sealing ring having a roller-burnished sealing surface, but instead only teach a ring with a coated surface.

In view of these considerations it is respectfully submitted that the rejection of claim 2 under 35 U.S.C. 103(a) over a combination of the above-discussed references is overcome and should be withdrawn.

The patent to Yoshida discloses a seal structure for relatively rotational members. At column 15, lines 28-48, Yoshida describe a treated surface 200, 200a which is surface hardened and then coated.

The Examiner combined Robotham with Yoshida in determining that claim 1 and 3-5 would be unpatentable over such a combination. Neither Robotham nor Yoshida teach a sealing ring

having a roller-burnished sealing surface, but instead only teach a ring with a coated surface.

In view of these considerations it is respectfully submitted that the rejection of claim 1 and 3-5 under 35 U.S.C. 103(a) over a combination of the above-discussed references is overcome and should be withdrawn.


Reconsideration and allowance of the present application are respectfully requested.

Any additional fees or charges required at this time in connection with this application may be charged to Patent and Trademark Office Deposit Account No. 02-2275.

Respectfully submitted,

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